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A61C 3/02(21) Application number: **04146263**(71) Applicant: **SHIN ETSU CHEM CO LTD**(22) Date of filing: **13.05.92**(72) Inventor: **IIDA TAMAKI**(54) **DENTAL TOOL AND ITS MANUFACTURE**

dental tool as the object can be obtained.

(57) Abstract:

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PURPOSE: To obtain a dental tool which has an excellent grinding and polishing property and can give a good color feeling, gloss, and smoothness by coating a diamond single crystal particle layer on the whole surface of a grinding head made of a ceramic base material in which plural cooling water grooves are provided.

CONSTITUTION: This dental tool is composed by providing plural grooves of a vertical type, a crossing spiral type, a parallel crosses type, a spiral type, and the like, to a ceramic base material of a cylindrical form or an inverse truncated cone form. As a ceramic base material to compose a grinding head 1, a high hardness material such as a silicon nitride, a silicon carbide, or an aluminum oxide is used, and after mixing about 2 to 3% of a sintering assistant such as yttria, magnesia or silicic acid to the fine powder of these materials, and formed into a desired form, it is sintered at a high temperature so as to obtain a compact. By depositing a diamond single crystal particle layer (5 to 50 μ m thickness) on the surface of such a compact in a gas phase diamond deposition method, a

